

IN THE CLAIMS:

Please cancel claims 1-69 without prejudice or disclaimer to the subject matter therein. Please add new claims 70-78 as follows.

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--70. (New) A data recording medium having a plurality of concentric or spiral tracks for recording information represented as marks and spaces between the marks, the marks being formed by emitting to a track recording surface an optical beam modulated by a plurality of drive pulses where the drive pulse count is adjusted according to a length of a mark part in the original signal to be recorded to the track, said data recording medium comprising:

a control data zone for storing control data formed by pits, said control data comprising:
at least one of a first pulse movement for modifying a first pulse of said drive pulses, and a last pulse movement for modifying a last pulse of said drive pulses; and
an operational power information including at least one of the following: a peak power setting, bias power setting, and margin constant, said operational power information indicative of light beam power used for recording actual data to the data area.

71. (New) A data recording medium as claimed in claim 70, wherein said first pulse movement and last pulse movement indicate either a pulse shift amount for shifting said first and last pulses, respectively, or a pulse width amount for changing the pulse width of said first and last pulses respectively; and

wherein said control data in said control data zone further comprises a code indicating a method for using said first pulse movement and last pulse movement either as a pulse shift amount or as a pulse width amount.

72. (New) A data recording medium as claimed in claim 70, wherein said control data in said control data zone further comprises asymmetry as one of said operational power information.

73. (New) A recording and reproducing apparatus for recording and reproducing a data recording medium,

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said data recording medium having a plurality of concentric or spiral tracks for recording information represented as marks and spaces between the marks, the marks being formed by emitting to a track recording surface an optical beam modulated by a plurality of drive pulses where the drive pulse count is adjusted according to a length of a mark part in the original signal to be recorded to the track, said data recording medium comprising:

a control data zone for storing control data formed by pits, said control data comprising:

at least one of a first pulse movement for modifying a first pulse of said drive pulses, and a last pulse movement for modifying a last pulse of said drive pulses; and

an operational power information including at least one of the following: a peak power setting, bias power setting, and margin constant, said operational power information indicative of light beam power used for recording actual data to the data area,

said recording and reproducing apparatus comprising:

a reading system that reads operational power information including at least one of peak power, bias power, and margin constant data; and

a determining system that determines drive pulse emission power based on the read operational power information.

74. (New) A recording and reproducing apparatus as claimed in claim 73, wherein said determining system for determining drive pulse emission power has a random signal generator for generating a random signal.

75. (New) A recording and reproducing apparatus as claimed in claim 73, wherein said determining system for determining drive pulse emission power has a simple pattern signal generator for generating a simple pattern signal that is a signal having a single period.

76. (New) A recording and reproducing method for recording and reproducing a data recording medium,

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said data recording medium having a plurality of concentric or spiral tracks for recording information represented as marks and spaces between the marks, the marks being formed by emitting to a track recording surface an optical beam modulated by a plurality of drive pulses where the drive pulse count is adjusted according to a length of a mark part in the original signal to be recorded to the track, said data recording medium comprising:

a control data zone for storing control data formed by pits, said control data comprising:

at least one of a first pulse movement for modifying a first pulse of said drive pulses, and a last pulse movement for modifying a last pulse of said drive pulses; and

an operational power information including at least one of the following: a peak power setting, bias power setting, and margin constant, said operational power information indicative of light beam power used for recording actual data to the data area,

said recording and reproducing method comprising:

a reading step that reads operational power information including at least one of peak power, bias power, and margin constant data; and

a determining step that determines drive pulse emission power based on the read operational power information.

77. (New) A recording and reproducing method as claimed in claim 76, wherein said determining step for determining drive pulse emission power has a generating step for generating a random signal.

78. (New) A recording and reproducing method as claimed in claim 76, wherein said determining step for determining drive pulse emission power has generating step for generating a simple pattern signal that is a signal having a single period.--